

**Contents****Volume 190**

JACK B. BROWN (Auburn, Alabama), PHILLIP J. CHASE (Ft. Meade, Maryland), AND ARTHUR O. PITTINGER (Baltimore, Maryland)	
Order Independence and Factor Convergence in Iterative Scaling . . . . .	1
JAMES S. OTTO (Denver, Colorado)	
Multigrid Convergence for Convection-Diffusion Problems on Composite Grids . . . . .	39
HASSANE SADOK (Villeneuve d'Ascq-Cedex, France)	
Quasilinear Vector Extrapolation Methods . . . . .	71
HAN H. CHO (Seoul, Korea)	
Prime Boolean Matrices and Factorizations . . . . .	87
J. B. WILKER (Scarborough, Ontario, Canada)	
The Quaternion Formalism for Möbius Groups in Four or Fewer Dimensions . . . . .	99
MARTIN HANKE (Karlsruhe, Germany) AND MICHAEL NEUMANN (Storrs, Connecticut)	
The Geometry of the Set of Scaled Projections . . . . .	137
JOEL E. COHEN (New York, New York) AND URIEL G. ROTHBLUM (Haifa, Israel)	
Nonnegative Ranks, Decompositions, and Factorizations of Nonnegative Matrices . . . . .	149
CAROLYN A. ESCHENBACH (Atlanta, Georgia) AND CHARLES R. JOHNSON (Williamsburg, Virginia)	
Sign Patterns That Require Repeated Eigenvalues . . . . .	169
RAYMOND H. CHAN AND KWOK-PO NG (Hong Kong, People's Republic of China)	
Toeplitz Preconditioners for Hermitian Toeplitz Systems . . . . .	181
ROGER A. HORN (Salt Lake City, Utah) AND DENNIS I. MERINO (Hammond, Louisiana)	
A Real-Coninvolutory Analog of the Polar Decomposition . . . . .	209
M. H. LIM (Kuala Lumpur, Malaysia)	
A Note on Similarity Preserving Linear Maps on Matrices . . . . .	229
MIROSLAV FIEDLER AND ZDENĚK VAVŘÍN (Praha, Czech Republic)	
Polynomials Compatible With a Symmetric Loewner Matrix . . . . .	235

*Table of Contents continued*

WILLIAM A. ADKINS (Baton Rouge, Louisiana), JEAN-CLAUDE EVARD  
(Laramie, Wyoming), AND ROBERT M. GURALNICK  
(Los Angeles, California)

Matrices Over Differential Fields Which Commute With Their  
Derivative . . . . . 253

AUTHOR INDEX . . . . . 263